Digital Orthophotography for Missouri
First of a series on the Missouri Orthophotography Project

The Missouri GIS Advisory Committee (MGISAC) has developed a consortium of state and federal agencies that have contracted for two-foot resolution, leaf-off, USGS quarter-quadrangle centered, digital orthophotography (DOQQs) for the eastern side of Missouri. These DOQQs will meet national map accuracy standards and be available to the public once completed. While we are very excited about this year's project, it simply laid the corner stone for the upcoming 2008 project encompassing the western side of the state.

Missouri's geospatial users have long identified the need for timely leaf off DOQQs for use by federal, state and local communities. While Missouri has partnered with the U.S. Department of Agriculture (USDA) for one meter DOQQs, the leaf-on conditions are problematic for some uses. Last year the USGS and Missouri agreed to partner for leaf-off DOQQs, but State funds were not available to contract the entire state. The decision was made to split the state roughly in half, and acquire the eastern side in 2007 and the western side in 2008. Due to the interest of the State Chief Information Officer, additional funding was found at the last minute to afford a two-foot resolution product. It was originally envisioned that a broader coalition of agencies and local governments could be established to participate in the initial flight, however, delays in securing seed funding caused fast approaching flight times to become an insurmountable issue. The timing was such that while the higher resolution product was funded, time was not sufficient to allow for local government to be included in a contract for even higher resolution DOQQs.

The MGISAC are now in a position to offer opportunities for participation to interested local governments. Any local government in Missouri can share in the 2008 acquisition. The more local governments that participate, the lower the costs will be. This cost savings is achieved because the vendor's costs of mobilization can be shared by the State/Federal acquisition, which will happen regardless of local involvement. In addition, the larger area flown at the lower altitudes needed for higher resolution DOQQs also results in savings.

What are some of the benefits of becoming a partner in this acquisition?

- Reduced costs. By partnering with others your costs will be less due again to the economy of scale. Also the state anticipates having more than adequate funds for the two foot resolution acquisition; any additional funds may be used to augment the costs for higher resolution DOQQs.
- The State will be responsible for administration of the contract.
- The State and USGS will aid in the verification of the product. The contract will have nationally consistent specifications to ensure that your deliverables meet the needs of your community. While you will be responsible for acceptance of your product, the State and USGS will be aiding in this effort and can provide USGS acceptance guidelines for your use.
- The State, through the state's geospatial data clearinghouse – the Missouri Spatial Data Information Service (MSDIS) - will distribute the data. As many of you know, it is very difficult to recover the costs of distributing data, by relieving your local government of this task; the effort to do this will be MGISAC's responsibility. This distribution by MSDIS is negotiable, should you want to control the distribution yourself, but you will not be able to use State funds.

MSDIS will need a metadata record which will be provided to Geospatial One Stop and the Ramona geospatial data inventory that will provide an accurate point of contact for actual data distribution. Recently acquired imagery is one of the highest priority tools needed in case of a national emergency, the metadata record will allow for access to your data in time of need.

- The State is interested in acquiring even higher resolution imagery in the future. By becoming a partner in the 2008 acquisition, even greater savings can be realized for the next cycle of acquisition.

Estimated Costs to Partner in this Project: Cost estimates from the government contracting, and vendor community are very difficult to obtain, and probably for good reason. The complexity of the project can dramatically change the cost. The biggest variable is the elevation model. For six inch and one foot resolution imagery there needs to be an elevation model that can support two foot contours. The vendor may have to augment your elevation data with additional mass points and breaklines depending on the terrain. Another unknown for this project is how the vendor will be able to plan his acquisition. If there are several counties in close proximity the vendor can plan one acquisition, if not they have to plan on how to jump around the state and collect everything in the most timely manner. All this is to warn you that the estimates are really that, rough estimates taken from the Requests for Information received last year plus taking cost from other projects. The six inch color imagery should cost approximately $200-$250 per square mile; the one foot color imagery should be approximately $150-$200 per square mile. The amount of six inch or one foot imagery being flown will impact your final cost, actual costs should be lower than the estimates provided.

Specifications: The specifications will be written using the USGS specifications used for acquiring the one foot true color imagery recently flown for St Louis, Jefferson City, and Kansas City. The projection can be either State Plane or UTM, zone 15. The horizontal datum will be North American Datum of 1983. The imagery will meet the required horizontal ASPRS Class I Accuracy for that resolution (3 meter RMSE), have FGDC compliant metadata, and use an agreed upon tiling schema such as The National Grid. USGS specifications for tonal balance, building lean and shadow are also in the contract. Again the USGS specifications will be used for this acquisition and acceptance testing will use USGS procedures.

Contacts:

Ray Fox, Co-Chair	Jeff Schloss, Co Chair
USGS Geospatial Liaison to MO	MO Dept of Natural Resources
1400 Independence Rd	PO Box 176, 205 Jefferson St
Rolla, MO 65401	Jefferson City, MO 65102
573-308-3744	573-751-5110
rfox@usgs.gov	Jeff.scholss@dnr.mo.gov

Tony Spicci	Mark Duewell	Nathan Mattox
State GIO MO Dept of Conservation	State Clearinghouse Manager University of Missouri/MSDIS	University of Missouri Extension Service
1110 S. College Avenue	20 Stewart Hall	20 Stewart Hall
Columbia, MO 65201	Columbia, MO 65211	Columbia, MO 65211
(573) 882-9909 x3295	573-882-6734	573-884-0790
Tony.Spicci@mdc.mo.gov	duewellm@missouri.edu	mattoxn@missouri.edu